

# Advertising Media and the Green Environmental Aspect

Consumers' attitudes versus marketing managers' beliefs about consumers

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## ABSTRACT

Previous research has shown that consumer trust in advertising is low and continues to diminish. Researchers have also found that a big share of advertising investments is placed in less favorable media which can contribute to consumers' increasing disbelief towards advertising. The results of the present study add to these previous findings by showing that the consumers' trust levels in advertising vary among the 11 different media studied and that the marketing managers' beliefs about consumers are not consistent with the consumers' attitudes toward and usage of advertising media. Ignoring this phenomenon may have consequences for companies investing in less favorable media and thereby adding to consumers' increasing disbelief towards advertising.

The greatest discrepancy was found for ads on TV. The marketing managers seem to believe incorrectly that ads on TV are not only more trusted but also more used by consumers than the consumers claim. The consumers were found to have more negative attitudes toward TV advertising than what the marketing managers believe about consumers. TV is also perceived by the consumers as more harmful for the green environment than the marketing managers believe about consumers.

The results show that the consumers have more positive attitudes toward direct mail than the marketing managers believe about them. The consumers perceive direct mail as better, less irritating and less harmful for the environment compared to the marketing managers' beliefs about them. In addition, the consumers claim to make more use of ads in many of the paper-based media than TV advertising when they want to buy different products. This was found to be not consistent with the marketing managers' beliefs about consumers. The consumers were found to have more negative attitudes toward advertising through the mobile phone than the marketing managers believe about consumers. Advertising through the mobile phone is considered by the consumers as one of the worst, most irritating and least trusted medium among the 11 advertising media studied. Moreover, the consumers consider the mobile phone to be more harmful for the green environment compared to the marketing managers' beliefs about consumers.

The results also show that the marketing managers feel more personal responsible towards caring for the green environment than the consumers. In addition, both the marketing managers and the consumers were found to have equally high demands and expectations of organizations to act responsibly toward the green environment. This contradicts previous findings that showed that the green environmental aspect is among the factors that are the least considered when marketing managers work with marketing communication in general and advertising media selection in particular. Furthermore, this study found that green environmental responsibility attitude (GERA) is weakly related to the perception on the green environmental aspect of advertising media. Thus, the discrepancies found in this study between the consumers and marketing managers regarding their green environmental perceptions on the 11 different advertising media should be explained by other factors.

**Keywords:** Advertising Media, Attitudes, Consumers, Marketing Managers, Green Environmental Responsibility Attitude (GERA)

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## **1. INTRODUCTION**

Advertising media selection is becoming increasingly intricate as continuous technological developments has led to more media options being available and thereby changing habits of media consumption (Percy and Elliot, 2005; Rademaker, 2011b; Turk and Katz, 1992). Marketing managers are further challenged by a highly competitive communication environment where message competition exists in marketing communication (Rosengren, 2008).

Because of our changing lifestyles, demographics and family life-cycle stages, postulations about how effective each advertising medium and media mix respectively is, can be challenged. According to Callius (2008) twenty two percent of Swedes actively avoid advertising in all traditional media. This does not mean that advertising has no effect. However it requires higher demands of marketing managers. A big share of advertising is placed in less favorable media. This could be seen as a waste of marketing resources as well as a contribution to consumers' increasing skepticism towards advertising. (Callius, 2008)

Edelman (2009) states that with consumers becoming less trustful of all sources of information about companies, trust in business has never been as low and continues to diminish, including trust in advertising. This is in line with prior research that showed that in general, consumers tend not to pay much attention to ads (Dahlén and Edenius, 2007; Pham and Johar, 1997).

According to Creamer and Klaassen (2007), consumers can be exposed between a range of 254 and 5 000 advertising messages per day. At the same time as advertising can bring pleasure and enjoyment previous research have found that it can also evoke opposing feelings such as irritation (Coulter et al., 2001; Shavitt et al., 1998; Calfee and Ringold, 1994; Pollay and Mittal, 1993). Other studies have found that irritation among consumers can be caused also by being exposed to many different types of advertising messages (e.g. Dunér and Jönsson, 2007; Ha, 1996). The level of irritation has been found to be higher when media

consumption is disrupted by advertising. For example, studies have shown that Swedes are more positive towards advertising in newspapers as opposed to advertising on TV whereas many as 18 ads could be included during one commercial break (Grusell, 2006; 2008).

Researchers have also found that consumers perceive advertising as something “bad”, and that they often tend to associate advertising with negative aspects rather than positive ones (Nordström, 2000; Sternvik, 2003; Larsson, 2004; Larsson, 2005). One reason given for this negativity is that advertising is a communication form that is usually perceived as aiming to influence consumers. As a consequence, advertising is viewed upon with skepticism. Furthermore, it has been found that advertising is perceived differently depending on which medium is used. Considering the many different advertising media that are available and used today, it could be inferred that consumers’ association to advertising is multifaceted (Grusell, 2007).

Since consumers’ attitudes toward different media may impact the effects on the target audience, it is important for marketing managers to have updated knowledge of consumer media attitudes. Building on and extending prior research, the objective of the present study is to investigate whether marketing managers’ beliefs about consumers are consistent with consumers’ attitudes toward advertising media. A special focus of this study is to investigate to what extent different advertising media are perceived to be harmful for the green environment and to what extent marketing managers’ beliefs about consumers are consistent with these perceptions.

Furthermore, the present study aims to explore to what extent consumers make use of different advertising media when they want to buy products, and to compare this to marketing managers’ beliefs about consumers. Investigating attitudes toward green environmental responsibility may aid in further explaining the findings of the study. The results of this study may contribute to a deeper understanding of consumers’ advertising media perceptions and

usage. Possible discrepancies found will aid marketing managers to select advertising media more effectively, i.e. more consistent with consumers' perceptions and usage of advertising media.

## **1.1 Attitudes toward Advertising Media**

It has been found that different advertising media can generate different communication effects. This is the case even when the same advertisements are used towards the same target audience (Nilsson, 2006; Nowland et al, 1962; Politz, 1962).

McLuhan (1964, p. 203) introduced the well known phrase "the medium is the message" by which he meant that the form of a medium embeds itself in the message. This in turn creates a symbiotic relationship whereby the medium impacts how the message is perceived. In order to reach out to its target market(s) companies are thus challenged to be on the forefront of consumer media habits. The time has passed when consumers could be easily identified based on merely segmentation variables such as values, opinions, motivation and attitudes. Nor can merely using traditional advertising media be used in order to reach and influence consumers (Bezjian-Avery et al., 1998).

The tendency to avoid ads in a medium is related to beliefs and perceptions about them (Speck and Elliot, 1997). Consumers' negative attitudes toward advertising can create major challenges for marketing managers. Prior research has found that consumers with negative attitudes toward advertising tend to make efforts and choices against ads. For example, Grusell (2006) showed that 16 percent of Swedish households have a "No Advertising Please" sign on their mailboxes while another 16 percent were considering such a sign (Grusell, 2006).

A later study by YouGov (2009) concerning consumers' attitudes toward advertising media found that about 25 percent of Swedish households have a "No Advertising Please"

sign on their mail boxes. A major reason for this behavior given by the respondents was increased environmental concerns.

Another similar example that has received much attention in the press is the findings of a survey showing that 39 percent of Copenhagen's households have a sign on their doors stating "Advertising, no thank you". This has led to an environmental movement urging the remaining 61 percent of Copenhagen's households to stop consuming direct mail in paper form and instead to increase the use of ads through the Internet, for the sake of preserving the green environment (Andersson, 2011). These findings indicate that the green environmental aspect affects consumer media usage by showing that paper-based media (for example direct mail) tend to be regarded by consumers as media that are less eco-friendly than electronic media (for example media using the Internet). With this in mind, consumers' perceptions on how harmful for the environment different advertising media are could be further questioned.

In contrast, recent studies have indicated that green environmental issues are among the factors that are considered the least by Swedish marketing managers when they select media for marketing communication purposes (Rademaker, 2011a; 2011b). When taking into account the changing media behavior of consumers because of continuous media developments as well as consumers' increasing awareness of environmental issues<sup>1</sup>, it should be important for managers to have knowledge of consumers' attitudes toward advertising media to aid them in selecting media more effectively.

Marketing managers often cooperate with market research agencies (Rademaker, 2011a) to provide statistics on advertising media distribution, i.e. reach and frequency. While these statistics could be helpful for the marketing manager to obtain an overall impression of the number of prospects that should be exposed to the company's message at least once (reach)

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<sup>1</sup> Since the 1970's consumers' awareness of environmental issues has increased (Alwitt and Pitts, 1996; Loureiro et al, 2001) which has led to the green revolution with the aim to put a stop to further damage to the environment (Vaccaro, 2009). Consequently, consumers today are increasingly behaving environmentally responsible and are thereby more and more opting for eco-friendly products (Dubey, 2008; D'Souza, 2004; Loureiro et al, 2001).



and the number of times that the prospects are exposed to the message in a specified period (frequency), they do not give information about consumers' attitudes on advertising media.

Thus, the first research question is:

*RQ1: To what extent are marketing managers' beliefs about consumers consistent with consumers' attitudes toward advertising media?*

Statistics on reach and frequency do not provide information about to what extent consumers make use of different advertising media when they want to buy products. It should therefore also be of importance to marketing managers to have updated knowledge about the extent to which consumers make use of advertising media. Consequently, the second research question is:

*RQ2: To what extent are marketing managers' beliefs about consumers consistent with consumers' (claimed) usage of advertising media?*

## **1.2 Green Environmental Responsibility Attitude**

As previously mentioned, advertising media that are perceived to be harmful for the green environment may increase the tendency of consumers to avoid ads in such media. Consumers' attitude and use of advertising media may be affected by their attitude toward green environmental responsibility, on both a personal and organizational level. In other words, avoiding certain types of advertising media could be seen as consumers taking personal responsibility to care for the environment. By doing so, consumers are in a way punishing the organization for acting irresponsible towards the environment by boycotting its advertising message that is carried by a medium that consumers perceive to be harmful for the environment. Thus, assessing both consumers' and marketing managers' attitudes toward green environmental responsibility ought to be measured.

When searching the literature, it was found that green environmental responsibility attitude seems to be closely linked to theory on socially responsible consumption behavior. Socially

responsible consumption is defined as “those consumer behaviors and purchase decisions which are related to environmental and resource-related problems and are motivated not only by a desire to satisfy personal needs, but also by a concern for the welfare of society in general (Antil, 1984, p. 35; Antil and Bennett, 1979, pp. 64-65).

By exploring beliefs about green environmental responsibility both consumers’ and marketing managers’ attitudes toward personal and organizational responsibility for caring for the green environment, will be assessed. The third research question is:

*RQ3: To what extent is the green environmental responsibility attitude (GERA) of the marketing manager consistent with that of the consumer and how does GERA relate to the perception on how harmful for the green environment a specific advertising medium is?*

### 1.3 Frequently used Abbreviations

The following abbreviations are used throughout the paper:

GERA	Green environmentally responsible attitude
n.r.	Non response
n.s.	Non significant
M	Mean
SD	Standard Deviation
p	Probability value <sup>2</sup>
t	t-value
df	Degrees of freedom
$\eta^2$	Eta squared <sup>3</sup>

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<sup>2</sup> Based on two-tailed t-tests.

<sup>3</sup> The values of the effect size are interpreted as proposed by Cohen 1988, pp. 284-287.

## **2. METHOD**

Two online surveys are designed: one directed to consumers and another to marketing managers. The marketing manager survey comprises questions that are parallel to those in the consumer survey. To maximize validity, the surveys were pre-tested and adjustments were made in regards to certain formulations and re-wording of the questions.

### **2.1 The Consumer Survey**

#### **2.1.1 Target sample**

The total sample ( $N = 2411$ ) consists of consumers corresponding to the Swedish population as to gender, age (20 – 64 years) and geographic location, randomly selected from an Internet panel<sup>4</sup>.

#### **2.1.2 Data collection**

The consumer survey was conducted during July 2 – 6 2010. An invitation to the survey was sent by e-mail to the sample. Of the total sample 80 percent ( $n = 1928$ ) completed the questionnaire. The non-response rate was 20 percent ( $n = 483$ ). The sample comprised 49.25 percent female and 50.75 percent male. The sample corresponds well to the Swedish population as to gender, age and geographic location (see Table 1 below).

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<sup>4</sup> The Internet panel was supplied by YouGov Sweden.

**Table 1: Sample characteristics of the consumer survey**

<b>Total</b>	<b>N=1928</b>	<b>100%</b>
<b>Gender</b>		
Female	949	49.25%
Male	979	50.75%
<b>Age</b>		
20-29 years	391	20.28%
30-39 years	443	22.99%
40-49 years	446	23.14%
50-54 years	648	33.59%
<b>Region</b>		
North of Sweden	239	12.42%
North Central Sweden	345	17.88%
Stockholm	424	22.00%
South Central Sweden	579	30.01%
Skåne, Halland and Blekinge	341	17.68%

## 2.2 The Marketing Manager Survey

### 2.2.1 Target sample

The sample comprises all 499 members of the Association for Swedish Advertisers (ASA)<sup>5</sup>. A main reason behind opting for the sample is that Swedish largest media buyers can be found among these members. Consequently, their behavior has thus great consequences for the Swedish media industry. A broad diversity of companies with various types of annual media investments can also be found among the members of the ASA.

### 2.2.2 Data collection

A web survey among all the 499 members of the ASA was conducted using the software Qualtrics during October 4 - 18, 2010. One week prior to the launch of the survey an announcement was sent per email informing ASA's members of the upcoming survey. On the date of the survey launch, a link to the web survey was included in a message sent by e-mail to all members of the ASA. Reminder e-mails were sent to non-respondents. The response

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<sup>5</sup> The members of ASA are most often marketing managers or managers with similar titles.

rate was 39 percent (Table 2).

**Table 2: Sample characteristics of the marketer survey**

<b>Sample</b>	<b>Completed</b>	<b>Partially Completed</b>
N=193 (100%)	105 (54.4%)	88 (45.6%)
<b>Gender</b>		
Female	54 (51%)	n. r.
Male	51 (49%)	n. r.
<b>Age</b>		
20 – 29 years	2 (1.9%)	n. r.
30 – 39 years	30 (28.6%)	n. r.
40 – 49 years	45 (42.9%)	n. r.
50 – 59 years	22 (21%)	n. r.
60 – 65 years	6 (5.7%)	n. r.
<b>Business type</b>		
100% B2C	15 (14.2%)	n. r.
10-30% B2C/70-90% B2B	29 (27.6%)	n. r.
40-60% B2C/40-60% B2B	19 (18.1%)	n. r.
70-90% B2C/10-30% B2B	16 (15.2%)	n. r.
100% B2B	26 (24.8%)	n. r.
<b>Experience with media selection</b>		
2 – 3 years	8 (7.6%)	n. r.
4 – 6 years	19 (18.1%)	n. r.
7 – 9 years	6 (5.7%)	n. r.
10 years and up	72 (68.6%)	n. r.
<b>Annual media investments</b>		
< 2 million SEK	23 (21.9%)	n. r.
< 5 million SEK	12 (11.4%)	n. r.
< 10 million SEK	19 (18.1%)	n. r.
< 15 million SEK	10 (9.5%)	n. r.
< 20 million SEK	8 (7.6%)	n. r.
< 40 million SEK	14 (13.3%)	n. r.
< 70 million SEK	7 (6.7%)	n. r.
> 70 million SEK	12 (11.4%)	n. r.
<b>Employees</b>		
< 10	7 (6.7%)	n. r.
11 – 50	15 (14.3%)	n. r.
51 – 500	35 (33.3%)	n. r.
501 – 1000	12 (11.4%)	n. r.
1001 – 5000	15 (14.3%)	n. r.
5001 – 10 000	5 (4.8%)	n. r.
> 10 000	16 (15.2%)	n. r.
<b>Environmental Policy</b>		
Yes	85 (79.4%)	n. r.
No	18 (16.8%)	n. r.
Do not know	4 (3.7%)	n. r.

The partially completed surveys (88 respondents) were included in the study. The majority of the respondents are professionals with more than ten years of experience of media selection.

## **2.3 Measures**

To measure consumers' and marketing managers' attitudes a sliding scale with the extreme points 0 and 10 were used.

### **2.3.1 The advertising media to be studied**

The selection of advertising media was based on previous studies such as Grusell's (2007) with the exception of three media types that were added for the present study namely, city buses, catalogues and brochures, and in-store ads (posters). These three media in particular were added because of its' green environmental related characteristics, i.e. paper-based (catalogues, brochures and in-store ads) and engine-driven vehicles (city buses). Thus, for this study, the following 11 advertising media were selected to measure attitudes of advertising in different media:

1. Newspapers and magazines
2. Mobile phones (SMS and MMS)
3. Outdoor
4. Radio
5. Direct mail (delivered through home postal box)
6. TV
7. Catalogues and brochures
8. City buses (the exterior of city buses)
9. Cinema advertising
10. Internet (media using the Internet)
11. In-store (posters)

In the following, the dependent variables with the respective measures used are discussed.

### **2.3.2 Attitudes toward advertising media**

To first assess consumers' overall attitude towards advertising, consumers' attitude towards advertising in general were to be measured. Thereafter, consumers' attitudes toward advertising in the 11 different media were measured.

Consumers' *attitudes toward advertising in general* were measured by the questions: "To what extent do you think it is good or bad with advertising in general?" (adapted from Shavitt et al., 1998) and "To what extent do you think it is good or bad with advertising that is adjusted to your previous purchases?" (Scale: 0 = very bad, 10 = very good).

Marketing managers' *beliefs of consumers' attitudes toward advertising in general* were measured by the questions: "In your opinion, to what extent do consumers think it is good or bad with advertising in general?" and "In your opinion, how good or bad do consumers think of ads that are adjusted to their previous purchases?" (Scale: 0 = very bad, 10 = very good).

Consumers' *attitudes toward advertising media* were measured by the following questions: "To what extent do you think it is good or bad with advertising in the following media?" (Scale: 0 = very bad, 5 = neither bad/good, 10 = very good), "To what extent do you think it is irritating with advertising in the following media?" (Scale: 0 = not at all irritating, 10 = to a very great extent irritating), "To what extent do you trust advertising in the following media?" (Scale: 0 = do not trust at all, 10 = trust to a very great extent), and "To what extent do you think that the following media are harmful for the environment?" (Scale: 0 = not at all harmful, 10 = to a very great extent harmful).

Marketing managers' *beliefs of consumers' attitudes toward advertising media* were measured by the following questions: "In your opinion, to what extent do consumers perceive it is good or bad with advertising in the following media?" (Scale: 0 = very bad, 5 = neither bad/good, 10 = very good), "In your opinion, to what extent do consumers perceive it is

irritating with advertising in the following media?” (Scale: 0 = not at all irritating, 10 = to a very great extent irritating), “In your opinion, to what extent do consumers trust advertising in the following media?” (Scale: 0 = do not trust at all, 10 = trust to a very great extent) and, “In your opinion, to what extent do consumers perceive the following media to be harmful for the environment?” (Scale: 0 = not at all harmful, 10 = to a very great extent harmful).

### **2.3.3 Advertising media usage**

Consumers’ use of advertising media was measured for two different types of products, namely for groceries and household electronics such as a printer.

Consumers’ *use of advertising media* was measured using the following questions: “To what extent do you make use of ads in the following media when you want to buy groceries?” and “To what extent do you make use of ads in the following media when you want to buy electronics such as a printer?” (Scale: 0 = never/not at all, 10 = to a very great extent).

Marketing managers’ *beliefs of consumers’ use of advertising media* for the two different product types mentioned above, was measured using the following questions: “In your opinion, to what extent do consumers make use of ads in the following media when they want to buy groceries?” and “In your opinion, to what extent do consumers make use of ads in the following media when they want to buy electronics such as a printer?” (Scale: 0 = never/not at all, 10 = to a very great extent).

### **2.3.4 Green environmental responsibility attitude**

Consumers’ and marketing managers’ *attitudes toward green environmental responsibility* were measured using the following items, inspired by Antil et al. (1979) and Antil (1984): “I am very concerned about the environmental situation of today”, “I do everything I can in my everyday life in order not to contribute to harm the environment”, “In order to preserve the environment I print out paper as little as possible”, “I will stop buying products from companies that are guilty of harming the environment even if it would create discomfort for



me”, “I am very precise with paper being sorted and recycled”, “I don’t think that there are any serious environmental problems today”, “Companies have a big responsibility not to harm the environment”, Companies should do everything they can not to harm the environment”, “To care for the environment is the responsibility of the government and the parliament” and “The parliament should impose stricter laws for harming the environment” (Scale: 0 = completely disagree, 10 = completely agree).

### 3. ANALYSIS AND RESULTS

Independent samples t-tests (two-tailed) were conducted to compare scores of the consumers' attitudes and the marketing managers' beliefs about consumers.

#### 3.1 Attitudes toward Advertising Media

The first research question was:

*RQ1: To what extent are marketing managers' beliefs about consumers consistent with consumers' attitudes toward advertising media?*

First, consumers' attitudes toward advertising in general were measured between the two groups. The results show significant differences ( $p \leq 0.05$ ) between the consumers' attitudes toward advertising in general and marketing managers' beliefs about consumers (Table 3). Compared to the marketing managers' beliefs about consumers, the consumers were found to have more negative attitudes toward advertising in general as well as towards ads that are adjusted to their previous purchases.

The results show that the consumers view advertising in general as slightly more bad than good ( $M = 4.62$ ,  $SD = 2.36$ ) while the marketing managers believe that consumers view advertising in general to be more good ( $M = 5.54$ ,  $SD = 1.74$ ;  $t = -5.70$ ,  $p < .001$ , small  $\eta^2 = .02$ ). The results also indicate that the consumers ( $M = 5.02$ ,  $SD = 2.70$ ) do not view advertising that are adjusted to their previous purchases as good as what the marketing managers believe about consumers ( $M = 6.78$ ,  $SD = 1.83$ ;  $t = -9.33$ ,  $p < .001$ , small  $\eta^2 = .04$ ).

**Table 3: Attitudes toward advertising in general – bad/good**

Ads in general					Ads adjusted to previous purchases				
Consumers <i>n</i> =1928	Managers <i>n</i> =132				Consumers <i>n</i> =1928	Managers <i>n</i> =107			
M (SD)	M (SD)	t (df)	P	$\eta^2$	M (SD)	M (SD)	t (df)	P	$\eta^2$
4.62 (2.36)	5.54*** (1.74)	-5.70 (166)	<.001	.02	5.02 (2.70)	6.78*** (1.83)	-9.33 (133)	<.001	.04

Note: \*\*\*:  $p \leq 0.001$

Significant differences were also found between the consumers' attitudes toward advertising media and marketing managers' beliefs about consumers. These are discussed hereafter.

### **3.1.1 Advertising medium – bad/good**

In relation to the bad/good variable, the consumers do not seem to perceive advertising in the following media as good as what the marketing managers believe about consumers:

- Newspapers and magazines (consumers:  $M = 6.05$ ,  $SD = 2.18$  vs. managers:  $M = 6.86$ ,  $SD = 1.56$ ;  $t = -5.54$ ,  $p < .001$ , small  $\eta^2 = .02$ )
- Mobile phones (consumers:  $M = 1.77$ ,  $SD = 2.16$  vs. managers:  $M = 3.39$ ,  $SD = 2.41$ ;  $t = -7.40$ ,  $p < .001$ , small  $\eta^2 = .03$ )
- Outdoor (consumers:  $M = 5.82$ ,  $SD = 2.23$  vs. managers:  $6.42$ ,  $SD = 1.84$ ;  $t = -3.54$ ,  $p < .001$ , small  $\eta^2 = .01$ )
- Radio (consumers:  $M = 3.48$ ,  $SD = 2.44$  vs. managers:  $M = 4.86$ ,  $SD = 2.27$ ;  $t = -6.23$ ,  $p < .001$ , small  $\eta^2 = .02$ )
- TV (consumers:  $M = 3.43$ ,  $SD = 2.55$  vs. managers:  $M = 5.16$ ,  $SD = 2.01$ ;  $t = -9.23$ ,  $p < .001$ , small  $\eta^2 = .04$ )
- Cinema (consumers:  $M = 5.70$ ,  $SD = 2.46$  vs. managers:  $M = 7.07$ ,  $SD = 1.95$ ;  $t = -7.57$ ,  $p < .001$ , small  $\eta^2 = .03$ )
- Internet (consumers:  $M = 4.50$ ,  $SD = 2.42$  vs. managers:  $M = 5.64$ ,  $SD = 2.07$ ;  $t = -5.98$ ,  $p < .001$ , small  $\eta^2 = .02$ )

These results thus indicate that the marketing managers believe incorrectly that consumers view advertising in these media to be better than consumers actually do.

Worth mentioning, at a significance level of  $p < .10$ , the consumers seem to view advertising through direct mail to some extent better compared to what the marketing managers believe about consumers (consumers:  $M = 4.76$ ,  $SD = 3.04$  vs. managers:  $M = 4.34$ ,

SD = 2.38;  $t = 1.91$ ,  $p = .058$ , small  $\eta^2 = .002$ ).

No significant difference between the two groups was found on attitudes toward advertising in catalogues and brochures, and in-store. This finding indicates that the marketing managers' beliefs about consumers are consistent with the consumers' attitudes toward advertising in these media. Table 4 below presents the results of these findings.

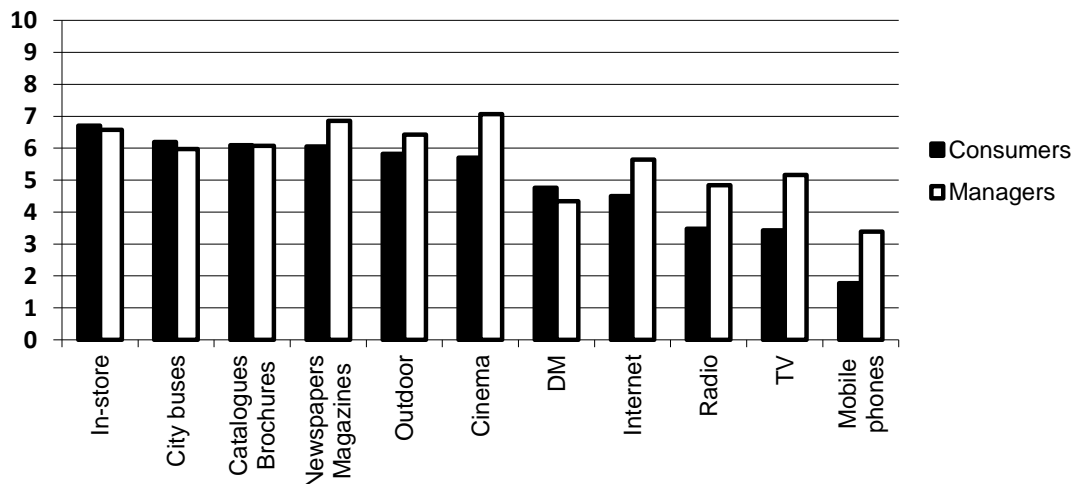
**Table 4: Attitudes on advertising media – bad/good**

Medium	Bad/Good		t (df)	P	$\eta^2$
	Consumers <i>n</i> =1928 M (SD)	Managers <i>n</i> =128 M (SD)			
Newspapers and magazines	6.05 (2.18)	6.86*** (1.56)	-5.54 (162)	<.001	.02
Mobile phones	1.77 (2.16)	3.39*** (2.41)	-7.40 (141)	<.001	.03
Outdoor	5.82 (2.23)	6.42*** (1.84)	-3.54 (153)	.001	.01
Radio	3.48 (2.44)	4.86*** (2.27)	-6.23 (2054)	<.001	.02
Direct mail	4.76 (3.04)	4.34* (2.38)	1.91 (156)	.058	<.01
TV	3.43 (2.55)	5.16*** (2.01)	-9.23 (155)	<.001	.04
Catalogues and brochures	6.09 (2.28)	6.07 (1.99)		n.s.	
City buses	6.19 (2.37)	5.97 (1.75)		n.s.	
Cinema	5.70 (2.46)	7.07*** (1.95)	-7.57 (155)	<.001	.03
Internet	4.50 (2.42)	5.64*** (2.07)	-5.98 (151)	<.001	.02
In-store	6.70 (2.15)	6.57 (2.31)		n.s.	

Note: \*\*\*:  $p \leq 0.001$ ; \*:  $p \leq 0.10$

From Table 4 and Figure 1 it can be further observed that cinema scored the highest among marketing managers ( $M = 7.07$ ,  $SD = 1.95$ ) which is not consistent with the consumers' attitudes ( $M = 5.70$ ,  $SD = 2.46$ ). This thus indicate that the marketing managers believe that cinema advertising is perceived by consumers to be the best among the 11 media studied here while the consumers perceive advertising in this medium not to be as good.

Advertising through the mobile phone scored the lowest among both groups and thus seems to be the worst medium as perceived by both the consumers ( $M = 1.77$ ,  $SD = 2.16$ ) and marketing managers' beliefs about consumers ( $M = 3.39$ ,  $SD = 2.41$ ). Figure 1 provides an illustration of the findings on the bad/good variable.



**Figure 1: Advertising media – bad/good**

### 3.1.2 Advertising medium – irritating

Significant differences ( $p \leq .05$ ) were found between consumers' attitudes and marketing managers' beliefs about consumers on the irritating variable (see Table 5). The results indicate that consumers view advertising in the following media to be more irritating compared to marketing managers' beliefs about consumers:

- Newspapers and magazines (consumers:  $M = 3.52$ ,  $SD = 2.33$  vs. marketers:  $M = 3.00$ ,  $SD = 1.74$ ;  $t = 3.18$ ,  $p = .002$ , small  $\eta^2 = .01$ )

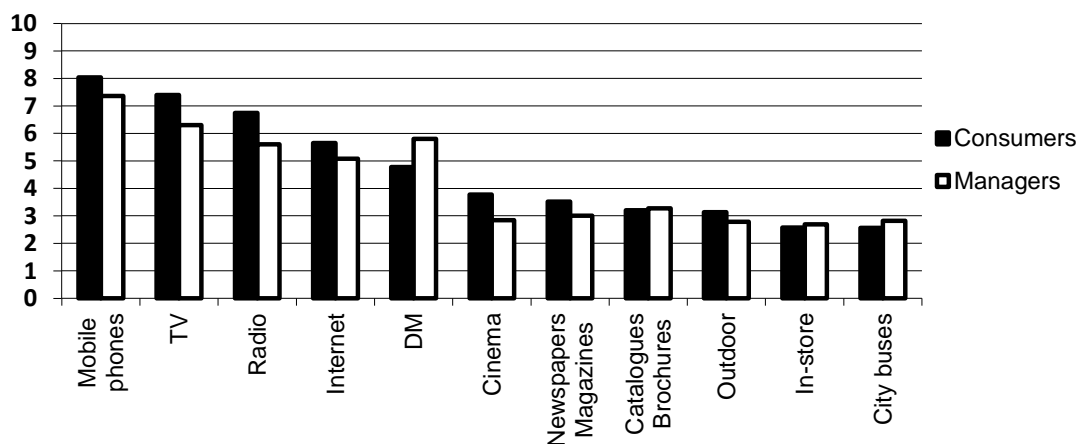
- Mobile phones (consumers:  $M = 8.04$ ,  $SD = 2.69$  vs. managers:  $M = 7.36$ ,  $SD = 2.30$ ;  $t = 2.77$ ,  $p = .006$ , small  $\eta^2 = .004$ )
- Outdoor (consumers:  $M = 3.13$ ,  $SD = 2.43$  vs. managers:  $M = 2.78$ ,  $SD = 1.81$ ;  $t = 2.09$ ,  $p = .038$ , small  $\eta^2 = .002$ )
- Radio (consumers:  $M = 6.74$ ,  $SD = 2.71$  vs. managers:  $M = 5.60$ ,  $SD = 2.05$ ;  $t = 5.92$ ,  $p < .001$ , small  $\eta^2 = .02$ )
- TV (consumers:  $M = 7.40$ ,  $SD = 2.54$  vs. managers:  $M = 6.30$ ,  $SD = 2.28$ ;  $t = 5.21$ ,  $p < .001$ , small  $\eta^2 = .01$ )
- Cinema (consumers:  $M = 3.77$ ,  $SD = 2.74$  vs. managers:  $M = 2.84$ ,  $SD = 2.31$ ;  $t = 3.71$ ,  $p < .001$ , small  $\eta^2 = .01$ )
- Internet (consumers:  $M = 5.65$ ,  $SD = 2.69$  vs. managers:  $M = 5.08$ ,  $SD = 2.13$ ;  $t = 2.85$ ,  $p = .005$ , small  $\eta^2 = .004$ ).

The findings also indicate that consumers view direct mail less irritating ( $M = 4.78$ ,  $SD = 3.23$ ) compared to marketing managers' beliefs about consumers ( $M = 5.80$ ,  $SD = 2.15$ ;  $t = -4.97$ ,  $p < .001$ , small  $\eta^2 = .01$ ).

Table 5 and Figure 2 below give an illustration of these findings. It can be observed that advertising through the mobile phone scored the highest on the irritating variable among both groups. This thus indicates that marketing managers' beliefs about consumers are consistent with the view that advertising through mobile phones are most irritating among the 11 media studied here. However, marketing managers' beliefs do not seem to be consistent with the extent to which consumers view these two media as irritating. Among the media where significant differences were found between the two groups, outdoor scored the lowest and thus seems to be among the media that are perceived to be least irritating.

**Table 5: Advertising media – irritating**

Medium	Irritating		t (df)	P	$\eta^2$
	Consumers n=1928 M (SD)	Managers n=126 M (SD)			
Newspapers and magazines	3.52 (2.33)	3.00*** (1.74)	3.18 (156)	.002	.01
Mobile phones	8.04 (2.69)	7.36*** (2.30)	2.77 (2052)	.006	<.01
Outdoor	3.13 (2.43)	2.78*** (1.81)	2.09 (156)	.039	<.01
Radio	6.74 (2.71)	5.60*** (2.05)	5.92 (155)	<.001	.02
Direct mail	4.78 (3.23)	5.80*** (2.15)	-4.97 (164)	<.001	.01
TV	7.40 (2.54)	6.30*** (2.28)	5.21 (146)	<.001	.01
Catalogues and brochures	3.20 (2.30)	3.27 (1.99)		n.s.	
City buses	2.56 (2.42)	2.82 (2.01)		n.s.	
Cinema	3.77 (2.74)	2.84*** (2.31)	3.71 (2052)	<.001	.01
Internet	5.65 (2.69)	5.08*** (2.13)	2.85 (152)	.005	<.01
In-store	2.58 (2.25)	2.69 (2.17)		n.s.	

Note: \*\*\*:  $p \leq 0.001$ **Figure 2: Advertising media – irritating**

### 3.1.3 Advertising medium - trust

The findings show significant differences ( $p \leq .05$ ) between consumers' attitudes and marketing managers' beliefs about consumers on the trust variable for all 11 advertising media. Regardless of the medium used, consumers do not trust advertising as much as marketing managers believe about consumers. The following differences between consumers' attitudes and marketing managers' beliefs about consumers on the trust variable were found:

- Newspapers and magazines (consumers:  $M = 4.22$ ,  $SD = 2.44$  vs. managers:  $M = 6.22$ ,  $SD = 1.80$ ;  $t = -11.31$ ,  $p < .001$ , moderate  $\eta^2 = .06$ )
- Mobile phones (consumers:  $M = 2.35$ ;  $SD = 2.31$  vs. managers:  $3.63$ ,  $SD = 2.10$ ;  $t = -6.32$ ,  $p < .001$ , small  $\eta^2 = .02$ )
- Outdoor (consumers:  $M = 3.87$ ,  $SD = 2.33$  vs. managers:  $M = 5.37$ ,  $SD = 1.56$  (m);  $t = -9.70$ ,  $p < .001$ , small  $\eta^2 = .04$ )
- Radio (consumers:  $M = 3.27$ ,  $SD = 2.35$  vs. managers:  $M = 4.54$ ,  $SD = 1.67$ ;  $t = -7.73$ ,  $p < .001$ , small  $\eta^2 = .03$ )
- Direct mail (consumers:  $M = 4.49$ ,  $SD = 2.75$  vs. managers:  $M = 5.13$ ,  $SD = 2.10$ ;  $t = -3.14$ ,  $p = .002$ , small  $\eta^2 = .01$ )
- TV (consumers:  $M = 3.50$ ,  $SD = 2.38$  vs. managers:  $M = 5.57$ ,  $SD = 1.85$ ;  $t = -11.43$ ,  $p < .001$ , moderate  $\eta^2 = .06$ )
- Catalogues and brochures (consumers:  $M = 4.18$ ,  $SD = 2.39$  vs. managers:  $M = 5.97$ ,  $SD = 1.82$ ;  $t = -10.04$ ,  $p < .001$ , small  $\eta^2 = .05$ )
- City buses (consumers:  $M = 3.89$ ,  $SD = 2.37$  vs. managers:  $M = 5.11$ ,  $SD = 1.60$ ;  $t = -7.73$ ,  $p < .001$ , small  $\eta^2 = .03$ )
- Cinema (consumers:  $M = 3.80$ ,  $SD = 2.35$  vs. managers:  $M = 5.62$ ,  $SD = 1.64$ ;  $t = -11.25$ ,  $p < .001$ , moderate  $\eta^2 = .06$ )
- Internet (consumers:  $M = 2.91$ ,  $SD = 2.28$  vs. managers:  $M = 4.93$ ,  $SD = 1.95$ ;  $t = -10.69$ ,  $p < .001$ , small  $\eta^2 = .05$ )



- In-store advertising (consumers:  $M = 4.82$ ,  $SD = 2.68$  vs. managers:  $M = 6.53$ ,  $SD = 1.99$ ;  $t = -8.79$ ,  $p < .001$ , small  $\eta^2 = .04$ ). Table 6 and Figure 3 below present the results of these findings.

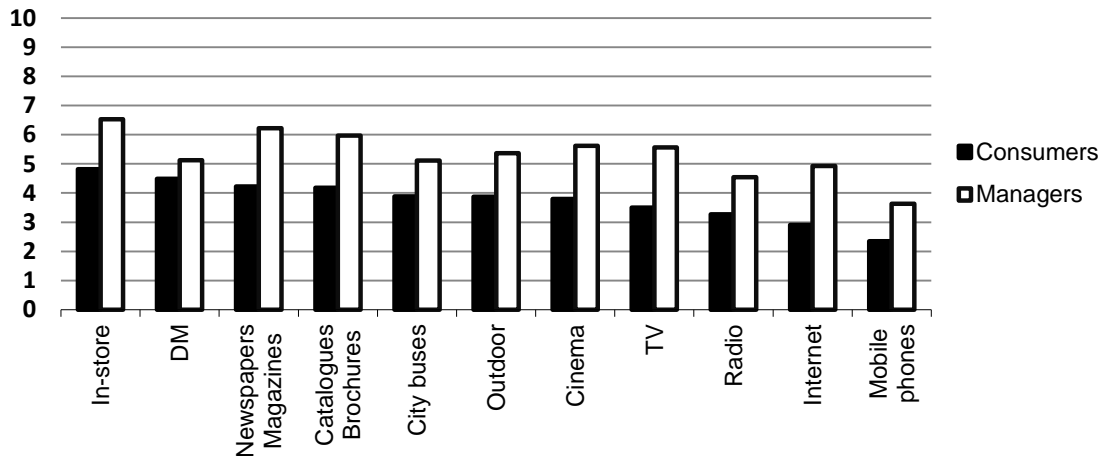
**Table 6: Advertising media – trust**

Medium	Trust		t (df)	P	$\eta^2$
	Consumers <i>N</i> =1928 <i>M</i> ( <i>SD</i> )	Managers <i>N</i> =115 <i>M</i> ( <i>SD</i> )			
Newspapers and magazines	4.22 (2.44)	6.22*** (1.80)	-11.31 (140)	<.001	.06
Mobile phones	2.35 (2.31)	3.63*** (2.10)	-6.32 (131)	<.001	.02
Outdoor	3.87 (2.33)	5.37*** (1.56)	-9.70 (146)	<.001	.04
Radio	3.27 (2.35)	4.54*** (1.67)	-7.73 (142)	<.001	.03
Direct mail	4.49 (2.75)	5.13*** (2.10)	-3.14 (138)	.002	.01
TV	3.50 (2.38)	5.57*** (1.85)	-11.43 (138)	<.001	.06
Catalogues and brochures	4.18 (2.39)	5.97*** (1.82)	-10.04 (138)	<.001	.05
City buses	3.89 (2.37)	5.11*** (1.60)	-7.73 (146)	<.001	.03
Cinema	3.80 (2.35)	5.62*** (1.64)	-11.25 (144)	<.001	.06
Internet	2.91 (2.28)	4.93*** (1.95)	-10.69 (133)	<.001	.05
In-store	4.82 (2.68)	6.53*** (1.99)	-8.79 (140)	<.001	.04

Note: \*\*\*:  $p \leq 0.001$

From Figure 3 it can be observed that in-store advertising scored the highest on the trust variable among both the consumers' attitudes and the marketing managers' beliefs about consumers. Another medium that scored among the highest by consumers is direct mail which

was not found to be consistent with marketing managers' beliefs about consumers. Furthermore, the mobile phone scored the lowest on this variable among both groups and thus seems to be the least trusted advertising medium among the 11 media studied.



**Figure 3: Advertising media – trust**

### 3.1.4 Advertising medium – harmful for the environment

Significant differences ( $p \leq .05$ ) on the harmful for the environment variable between the two groups were found (Table 7). Compared to marketing managers' beliefs about consumers, consumers view advertising in the following media to be more harmful for the environment:

- Newspapers and magazines (consumers:  $M = 5.68$ ,  $SD = 2.62$  vs. managers:  $M = 4.97$ ,  $SD = 2.38$ ;  $t = 2.86$ ,  $p = .004$ , small  $\eta^2 = .004$ )
- Mobile phones (consumers:  $M = 2.49$ ,  $SD = 2.66$  vs. managers:  $M = 1.46$ ,  $SD = 1.76$  (m);  $t = 5.92$ ,  $p < .001$ , small  $\eta^2 = .02$ )
- Outdoor (consumers:  $M = 4.68$ ,  $SD = 2.60$  vs. managers:  $M = 4.26$ ,  $SD = 2.16$ ;  $t = 2.03$ ,  $p = .045$ , small  $\eta^2 = .002$ )
- Radio (consumers:  $M = 2.04$ ,  $SD = 2.26$  vs. managers:  $M = 1.53$ ,  $SD = 1.91$ ;  $t = 2.79$ ,  $p = .006$ , small  $\eta^2 = .004$ )
- TV (consumers:  $M = 2.58$ ,  $SD = 2.47$  vs. managers:  $M = 2.17$ ,  $SD = 2.09$ ;  $t = 2.01$ ,  $p = .046$ , small  $\eta^2 = .002$ )

- Cinema (consumers:  $M = 2.14$ ,  $SD = 2.18$  vs. managers:  $M = 1.71$ ,  $SD = 1.88$ ;  $t = 2.07$ ,  $p = .038$ , small  $\eta^2 = .002$ )

- Internet (consumers:  $M = 2.08$ ,  $SD = 2.24$  vs. managers:  $M = 1.54$ ,  $SD = 1.95$ ,  $t = 2.55$ ,  $p = .011$ , small  $\eta^2 = .003$ )

On the other hand, when comparing to marketing managers' beliefs about consumers, consumers perceive advertising in the following media to be less harmful for the environment:

- Direct mail (consumers:  $M = 7.28$ ,  $SD = 2.63$  vs. managers:  $M = 7.99$ ,  $SD = 1.91$ ;  $t = -3.81$ ,  $p < .001$ , small  $\eta^2 = .01$ )

- Catalogues and brochures (consumers:  $M = 6.31$ ,  $SD = 2.62$  vs. managers:  $M = 6.91$ ,  $SD = 2.07$ ;  $t = -2.97$ ,  $p = .004$ , small  $\eta^2 = .004$ )

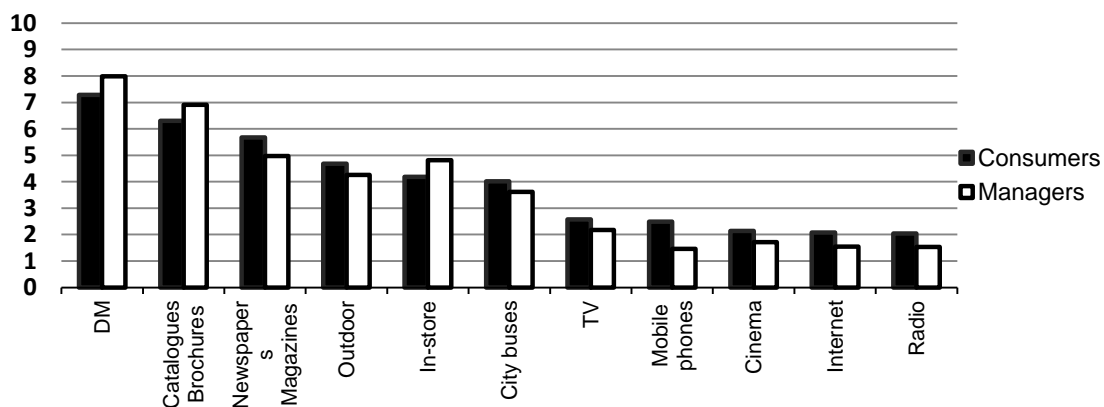
- In-store posters (consumers:  $M = 4.18$ ,  $SD = 2.55$  vs. managers:  $M = 4.81$ ,  $SD = 2.27$ ;  $t = -2.92$ ,  $p = .004$ , small  $\eta^2 = .004$ )

These last mentioned media can be categorized as paper-based advertising media as this was clarified to respondents in the surveys. Consumers seem to consider these media to be less harmful for the environment compared to marketing managers' beliefs about consumers.

From Figure 4 it can be observed that direct mail and, catalogues and brochures scored among the highest on this variable among the consumers, which is consistent with the marketing managers' beliefs about consumers. Furthermore, radio obtained the lowest score on this variable among the consumers which does not seem to be consistent with marketing managers' beliefs about consumers.

**Table 7: Advertising media - harmful for the environment**

Medium	Harmful for the environment		t (df)	p	$\eta^2$
	consumers <i>n</i> =1928 <i>M</i> ( <i>SD</i> )	managers <i>n</i> =117 <i>M</i> ( <i>SD</i> )			
Newspapers and magazines	5.68 (2.62)	4.97*** (2.38)	2.86 (2043)	.004	<.01
Mobile phones	2.49 (2.66)	1.46*** (1.76)	5.92 (150)	<.001	.02
Outdoor	4.68 (2.60)	4.26*** (2.16)	2.03 (137)	.045	<.01
Radio	2.04 (2.26)	1.53*** (1.91)	2.79 (136)	.006	<.01
Direct mail	7.28 (2.63)	7.99*** (1.91)	-3.81 (144)	<.001	.01
TV	2.58 (2.47)	2.17*** (2.09)	2.01 (137)	.046	<.01
Catalogues and brochures	6.31 (2.62)	6.91*** (2.07)	-2.97 (140)	.004	<.01
City buses	4.02 (2.71)	3.62* (2.33)	1.79 (136)	.074	<.01
Cinema	2.14 (2.18)	1.71*** (1.88)	2.07 (2043)	.038	<.01
Internet	2.08 (2.24)	1.54*** (1.95)	2.55 (2043)	.011	<.01
In-store	4.18 (2.55)	4.81*** (2.27)	-2.92 (134)	.004	<.01

Note: \*\*\*:  $p \leq 0.01$ ; \*:  $p \leq 0.10$ **Figure 4: Advertising media – harmful for the environment**

In Table 8 below, a summary of the consistencies and inconsistencies found between consumers' attitudes and marketing managers' beliefs about consumers on the 11 advertising media is given.

**Table 8: Summary of attitudes toward advertising media**

Medium	Bad/Good		Irritating		Trust		Harmful for environment	
	consumers	managers	consumers	managers	consumers	managers	consumers	managers
Newspapers Magazines	-	+	+	-	-	+	+	-
Mobile phones	-	+	+	-	-	+	+	-
Outdoor	-	+	+	-	-	+	+	-
Radio	-	+	+	-	-	+	+	-
Direct mail	+	-	-	+	-	+	-	+
TV	-	+	+	-	-	+	+	-
Catalogues Brochures	=	=	=	=	-	+	+	-
City buses	=	=	=	=	-	+	+	-
Cinema	-	+	+	-	-	+	+	-
Internet	-	+	+	-	-	+	+	-
In-store	=	=	=	=	-	+	+	-

Note: +) more, -) less, =) no significant difference in perception

### 3.3 Advertising Media Usage

The second research question was:

*RQ2: To what extent are marketing managers' beliefs about consumers consistent with consumers' (claimed) usage of advertising media?*

For different product categories, i.e. groceries and home electronics such as a computer printer, independent samples t-tests showed significant differences between marketing managers' beliefs about consumers and consumers' reported use of advertising media.

### 3.3.1 Groceries

Significant differences were found on advertising media usage for buying groceries between the consumers and the marketing managers' beliefs about consumers (Table 9). With the exception of catalogues and brochures where no significant difference was found between the two groups, the results indicate that the marketing managers believe consumers to make significantly ( $p < .01$ ) more use of all other media than what the consumers claim, namely:

- Newspapers and magazines (consumers:  $M = 4.49$ ,  $SD = 2.65$  vs. managers:  $M = 5.87$ ,  $SD = 2.50$ ;  $t = -5.52$ ,  $p < .001$ , small  $\eta^2 = .015$ )
- Mobile phones (consumers:  $M = 1.00$ ,  $SD = 1.78$  vs. managers:  $M = 2.57$ ,  $SD = 2.62$ ;  $t = -6.47$ ,  $p < .001$ , small  $\eta^2 = .02$ )
- Outdoor (consumers:  $M = 3.38$ ,  $SD = 2.44$  vs. managers:  $M = 4.68$ ,  $SD = 2.31$ ;  $t = -5.68$ ,  $p < .001$ , small  $\eta^2 = .02$ )
- Radio (consumers:  $M = 1.71$ ,  $SD = 2.07$  vs. managers:  $M = 3.69$ ,  $SD = 2.34$ ;  $t = -9.02$ ,  $p < .001$ , small  $\eta^2 = .04$ )
- Direct mail (consumers:  $M = 5.35$ ,  $SD = 3.33$  vs. managers:  $M = 6.95$ ,  $SD = 2.22$ ;  $t = -7.36$ ,  $p < .001$ , small  $\eta^2 = .03$ )
- TV (consumers:  $M = 3.08$ ,  $SD = 2.54$  vs. managers:  $M = 6.48$ ,  $SD = 1.72$ ;  $t = -20.26$ ,  $p < .001$ , large  $\eta^2 = .17$ )
- City buses (consumers:  $M = 2.68$ ,  $SD = 2.37$  vs. managers:  $M = 3.72$ ,  $SD = 2.47$ ;  $t = -4.65$ ,  $p < .001$ , small  $\eta^2 = .01$ )
- Cinema (consumers:  $M = 2.43$ ,  $SD = 2.43$  vs. managers:  $M = 3.64$ ,  $SD = 2.56$ ;  $t = -5.25$ ,  $p < .001$ , small  $\eta^2 = .013$ )
- Internet (consumers:  $M = 2.43$ ,  $SD = 2.37$  vs. managers:  $M = 4.64$ ,  $SD = 2.26$ ;  $t = -9.92$ ,  $p < .001$ , small  $\eta^2 = .05$ )

- In-store (consumers:  $M = 5.43$ ,  $SD = 2.62$  vs. managers:  $M = 8.26$ ,  $SD = 2.15$ ;  $t = -13.74$ ,  $p < .001$ , small  $\eta^2 = .05$ )

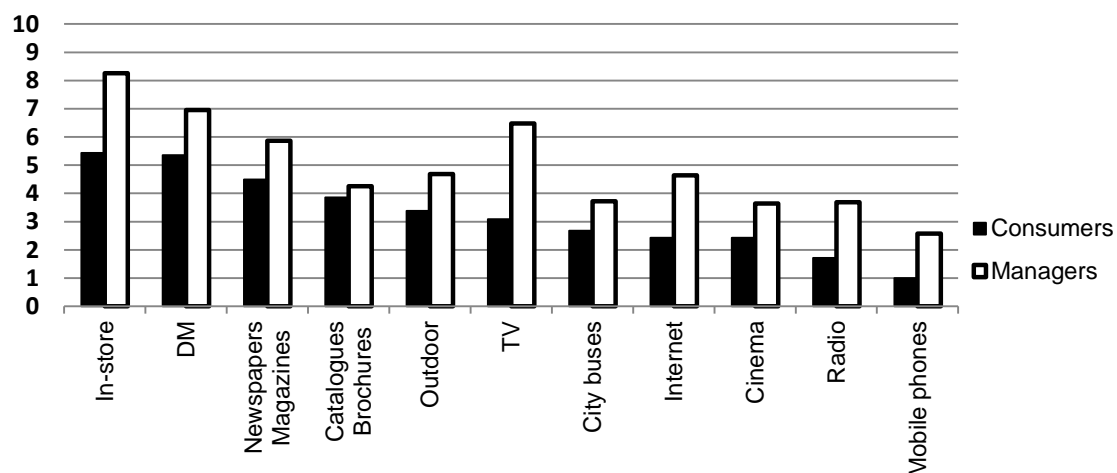
**Table 9: Advertising media usage – groceries**

Medium	Groceries		t (df)	P	$\eta^2$
	Consumers <i>N</i> =1928 <i>M</i> ( <i>SD</i> )	Managers <i>N</i> =119 <i>M</i> ( <i>SD</i> )			
Newspapers and magazines	4.49 (2.65)	5.87*** (2.50)	-5.52 (2045)	<.001	.01
Mobile phones	1.00 (1.78)	2.57*** (2.62)	-6.47 (125)	<.001	.02
Outdoor	3.38 (2.44)	4.68*** (2.31)	-5.68 (2045)	<.001	.02
Radio	1.71 (2.07)	3.69*** (2.34)	-9.02 (130)	<.001	.04
Direct mail	5.35 (3.33)	6.95*** (2.22)	-7.36 (153)	<.001	.03
TV	3.08 (2.54)	6.48*** (1.72)	-20.26 (152)	<.001	.17
Catalogues and brochures	3.86 (2.73)	4.25 (2.54)		n.s.	
City buses	2.68 (2.37)	3.72*** (2.47)	-4.65 (2045)	<.001	.01
Cinema	2.43 (2.43)	3.64*** (2.56)	-5.25 (2045)	<.001	.01
Internet	2.43 (2.37)	4.64*** (2.26)	-9.92 (2045)	<.001	.05
In-store	5.43 (2.62)	8.26*** (2.15)	-13.74 (140)	<.001	.05

Note: \*\*\*:  $p \leq 0.001$

TV was found to be the medium with the greatest discrepancy (Table 9 and Figure 5). When consumers want to buy groceries, they state to make less use of advertising on TV compared to what marketing managers believe they do. The use of advertising in media such as in-store (posters), direct mail, newspapers and magazines obtained higher scores than TV. When taking into account media characteristics it can be inferred that consumers for this product category tend to make more use of advertising in many of the paper-based media.

From Figure 5 below it can be observed that in-store (posters) and direct mail obtained the highest scores among the consumers, which seems to be in consistency with marketing managers' beliefs about consumers. However, the marketing managers believe that the extents by which consumers make use of these media are significantly higher than what the consumers claim. The advertising medium with the lowest score among the consumers is the mobile phone which indicates that it is the least used advertising medium when the consumers want to buy groceries. This seems to be consistent with marketing managers' beliefs about consumers. Figure 5 below gives an illustration of these findings.



**Figure 5: Advertising media usage for buying groceries**

### 3.3.2 Home electronics

Significant differences were found on advertising media usage for buying home electronics between the consumers and the marketing managers' beliefs about consumers (Table 10). For home electronics, the marketing managers believe that consumers make more use of all 11 advertising media studied here than consumers claim they do namely:

- Newspapers and magazine (consumers:  $M = 4.32$ ,  $SD = 2.94$  vs. managers:  $M = 6.78$ ,  $SD = 1.84$ ;  $t = -12.97$ ,  $p < .001$ , moderate  $\eta^2 = .08$ )
- Mobile phones (consumers:  $M = 1.00$ ,  $SD = 1.73$  vs. managers:  $M = 2.20$ ,  $SD = 2.23$ ;  $t = -5.53$ ,  $p < .001$ , small  $\eta^2 = .015$ )



- Outdoor (consumers:  $M = 2.19$ ,  $SD = 2.30$  vs. managers:  $M = 4.02$ ,  $SD = 2.37$ ;  $t = -8.00$ ,  $p < .001$ , small  $\eta^2 = .03$ )
- Radio (consumers:  $M = 1.50$ ,  $SD = 1.97$  vs. managers:  $M = 3.52$ ,  $SD = 2.18$ ;  $t = -10.31$ ,  $p < .001$ , small  $\eta^2 = .05$ )
- Direct mail (consumers:  $M = 4.61$ ,  $SD = 3.23$  vs. managers:  $M = 6.82$ ,  $SD = 2.22$ ;  $t = -9.79$ ,  $p < .001$ , small  $\eta^2 = .045$ )
- TV (consumers:  $M = 2.64$ ,  $SD = 2.60$  vs. managers:  $M = 6.02$ ,  $SD = 1.74$ ;  $t = -19.10$ ,  $p < .001$ , small  $\eta^2 = .15$ )
- Catalogues and brochures (consumers:  $M = 4.55$ ,  $SD = 2.97$  vs. managers:  $M = 7.03$ ,  $SD = 1.96$ ;  $t = -12.35$ ,  $p < .001$ , moderate  $\eta^2 = .07$ )
- City buses (consumers:  $M = 1.80$ ,  $SD = 2.13$  vs. managers:  $M = 3.47$ ,  $SD = 2.13$ ;  $t = -7.92$ ,  $p < .001$ , small  $\eta^2 = .03$ )
- Cinema (consumers:  $M = 1.62$ ,  $SD = 2.09$  vs. managers:  $M = 3.38$ ,  $SD = 2.45$ ;  $t = -7.29$ ,  $p < .001$ , small  $\eta^2 = .03$ )
- Internet (consumers:  $M = 3.52$ ,  $SD = 2.98$  vs. managers:  $M = 6.55$ ,  $SD = 2.12$ ;  $t = -14.09$ ,  $p < .001$ , large  $\eta^2 = .09$ )
- In-store (consumers:  $M = 4.04$ ,  $SD = 2.91$  vs. managers:  $M = 6.73$ ,  $SD = 2.16$ ;  $t = -12.36$ ,  $p < .001$ , moderate  $\eta^2 = .07$ )

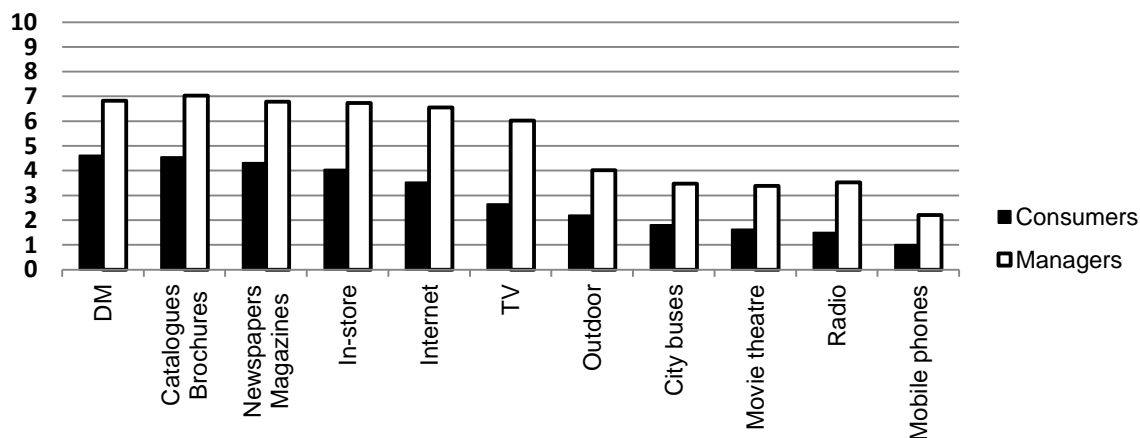
**Table 10: Advertising media usage for buying home electronics**

Medium	Electronics		t (df)	p	$\eta^2$
	Consumers <i>n</i> =1928 <i>M</i> ( <i>SD</i> )	Managers <i>n</i> =108-119 <i>M</i> ( <i>SD</i> )			
Newspapers and magazines	4.32 (2.94)	6.78*** (1.84)	-12.97 (139)	<.001	.08
Mobile phones	1.00 (1.73)	2.20*** (2.23)	-5.53 (114)	<.001	.01
Outdoor	2.19 (2.30)	4.02*** (2.37)	-8.00 (2034)	<.001	.03
Radio	1.50 (1.97)	3.52*** (2.18)	-10.31 (2034)	<.001	.05
Direct mail	4.61 (3.23)	6.82*** (2.22)	-9.79 (134)	<.001	.04
TV	2.64 (2.60)	6.02*** (1.74)	-19.10 (135)	<.001	.15
Catalogues and brochures	4.55 (2.97)	7.03*** (1.96)	-12.35 (136)	<.001	.07
City buses	1.80 (2.13)	3.47*** (2.13)	-7.92 (2034)	<.001	.03
Cinema	1.62 (2.09)	3.38*** (2.45)	-7.29 (116)	<.001	.03
Internet	3.52 (2.98)	6.55*** (2.12)	-14.09 (132)	<.001	.09
In-store	4.04 (2.91)	6.73*** (2.16)	-12.36 (130)	<.001	.07

Note: \*\*\*:  $p \leq 0.001$ 

TV was found to be the medium with the greatest discrepancy (Table 10 and Figure 6). When consumers want to buy home electronics such as a computer printer, the findings indicate that they make significantly less use of advertising on TV than what marketing managers believe about them. Consumers' claimed use of advertising in media such as direct mail, catalogues and brochures, newspapers and magazines, in-store and the Internet obtained higher scores than TV. With the exception of advertising using the Internet, these latter mentioned media can be categorized as paper-based media. Hence, for this product category the findings show that consumers make more use of paper-based media than what marketing managers believe about consumers.

From Figure 6 below it can be observed that the above mentioned paper-based media obtained the highest scores among the consumers, which is consistent with marketing managers' beliefs about consumers. The advertising medium with the lowest score is the mobile phone which thereby is the least used advertising medium by consumers when they want to buy home electronics. This is also consistent with marketing managers' beliefs about consumers. However, the marketing managers believe the extents by which consumers make use of these media to be much higher than consumers claim they do. Figure 6 gives an illustration of the findings.



**Figure 6: Advertising media usage for buying home electronics**

### 3.4 Green Environmental Responsibility Attitude (GERA)

The third research question was:

*RQ3: To what extent is the green environmental responsibility attitude (GERA) of the marketing manager consistent with that of the consumer and how does GERA relate to the perception on how harmful for the green environment a specific advertising medium is?*

In the attempt to find possible explanations for the discrepancies found especially in relation to the 'harmful for the environment' variable, a closer look at consumers' and marketing managers' green environmental responsibility attitude (GERA) will be taken next. Some significant differences were found between the consumers and marketing managers.

When comparing the scores of each item between consumers and marketing managers, the results show that the two items with a significant difference whereby consumers much more agreed to are: *“To care for the environment is the responsibility of the government and the parliament”* and *“I don’t think that there are any serious environmental problems today”*.

The findings indicate that the consumers put a greater demand on the government and the parliament for taking responsibility to care for the green environment than the marketing managers. In addition, the results indicate that marketing managers believe that today’s environmental problems are more serious than what the consumers believe.

The marketing managers also agree to a greater extent than consumers with the following items: *“I am very concerned about the environmental situation of today”*, *“I will stop buying products from companies that are guilty of harming the environment even if it would create discomfort for me”*, *I am very precise with paper being sorted and recycled”* and *“Companies have a big responsibility not to harm the environment”*.

Thus, these results indicate that compared to the consumers, the marketing managers are more concerned about the environmental situation today, they are more precise with paper being sorted and recycled and that they consider caring for the green environment to be more of an individual’s/organization’s responsibility rather than that of the government.

These latter findings have led to conducting further analysis by differentiating between two types of responsibilities in relation to caring for the green environment namely, personal and organizational responsibility. Two indexes were composed from the ten items measuring green environmental responsibility attitude (GERA), i.e. personal green environmental responsibility attitude (Personal GERA) and organizational green environmental responsibility attitude (Organizational GERA).

### 3.4.1 Personal GERA

The items used for the personal green environmental responsibility attitude (Personal GERA) are: *“I am very concerned about the environmental situation of today”*, *“I do everything I can in my everyday life in order not to contribute to harm the environment”*, *“In order to sustain the environment I print out paper as little as possible”*, *“I will stop buying products from companies that are guilty of harming the environment even if it would create discomfort for me”*, *“I am very precise with paper being sorted and recycled”*, *“I don’t think there are any serious environmental problems today”*.

These six items were first subjected to principal component analysis (PCA) to check whether one or more indexes should be formed. Prior to performing the PCA, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Olkin value was .83, exceeding the recommended value of .6 (Kaiser, 1970, 1974) and Bartlett’s Test of Sphericity (Bartlett, 1954) reached statistical significance, supporting the factorability of the correlation matrix. Principal component analysis revealed the presence of one component for both samples.

To improve the Cronbach alpha coefficient, reliability analysis among the six statements suggested one item to be deleted: *“I don’t think that there are any serious environmental problems today”*. The personal green environmental responsibility attitude was then measured with the five remaining items. Responses were averaged to form an additive index: Personal GERA. The Cronbach alpha coefficient was .808 (see Table 11).

### 3.4.2 Organizational GERA

The four items used for the organizational green environmental responsibility attitude (Organizational GERA) are: *“Companies have a big responsibility not to harm the environment”*, *“Companies should do everything they can to not harm the environment”*,

*“The parliament should impose stricter laws for harming the environment”, “To care for the environment is the responsibility of the government and the parliament”.*

To improve the Cronbach alpha coefficient, reliability analysis suggested one item to be deleted namely, *“To care for the environment is the responsibility of the government and the parliament”*. Organizational green environmental responsibility attitude was then measured with the three remaining items. Responses were averaged to form an index: Organizational GERA. The Cronbach alpha coefficient was .771.

An independent samples t-test was conducted to compare the additive scores of the two indexes among the marketing managers and the consumers. The results show a significant difference for the Personal GERA between the marketing managers ( $M = 7.18$ ,  $SD = 1.62$ ) and the consumers ( $M = 6.47$ ,  $SD = 1.95$ ;  $t = -4.40$ ,  $p < .001$ , small  $\eta^2 = .01$ ). This indicates that the marketing managers feel more personal responsible towards the green environment than the consumers. No significant difference was found for the Organizational GERA between the marketing managers ( $M = 8.02$ ,  $SD = 1.55$ ,  $n = 106$ ) and the consumers ( $M = 7.80$ ,  $SD = 1.83$ ,  $n = 1928$ ). It can be observed that the means of both groups on this index are high. This indicates that consumers and managers alike consider organizations to have a high responsibility to not harm the green environment.

The relationship between green environmental responsibility attitudes and green environmental perceptions of different advertising media was assessed next. Correlation analysis<sup>6</sup> between the Personal GERA and the ‘harmful for the environment’-variable for each of the 11 advertising media showed weak correlations among both the consumers ( $r = -.022$  to  $.026$ ,  $n = 1906$ ,  $p > .10$ ) and the marketing managers ( $r = -.105$  to  $.051$ ,  $n = 117$ ,  $p > .10$ ). There were also weak correlations between the Organizational GERA and the ‘harmful for the environment’-variable of the 11 advertising media among both the consumers ( $r = -.017$  to

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<sup>6</sup> Pearson correlation analysis. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity.

.035,  $n = 1906$ ,  $p > .10$ ) and the marketing managers ( $r = -.091$  to .035,  $n = 117$ ,  $p > .10$ ).

These findings indicate that attitudes toward green environmental responsibility are weakly related to the perception on how harmful for the green environment a specific advertising medium is.

**Table 11: Green environmental responsibility attitude (GERA)**

Items	Consumers $n = 1928$ M (SD)	Managers $n = 106$ M (SD)	t (df)	P	$\eta^2$	Index	Cronbach Alpha
I am very concerned about the environmental situation of today	6.23 (2.58)	7.07*** (2.30)	-3.60 (120)	<.001	<.01	Personal GERA	.808
I do everything I can in my everyday life in order not to contribute to harm the environment	6.22 (2.44)	6.53 (2.11)		n.s.			
In order to sustain the environment I print out paper as little as possible	6.34 (2.76)	6.70 (2.56)		n.s.			
I will stop buying products from companies that are guilty of harming the environment even if it would create discomfort for me.	5.51 (2.77)	6.90*** (2.32)	-5.92 (122)	<.001	.02		
I am very precise with paper being sorted and recycled	8.03 (2.37)	8.74*** (1.86)	-3.74 (124)	<.001	<.01		
<b>Personal GERA</b>	6.47 (1.95)	7.18 (1.62)	-4.40 (122)	<.001	.01		
Companies have a big responsibility not to harm the environment	8.16 (1.97)	8.48* (1.77)	-1.66 (2032)	.098	<.01	Organi- zational GERA	.771
Companies should do everything they can not to harm the environment	8.18 (2.10)	8.35 (1.77)		n.s.			
The parliament should impose stricter laws for harming the environment.	7.06 (2.52)	7.23 (2.13)		n.s.			
<b>Organizational GERA</b>	7.80 (1.83)	8.02 (1.55)		n.s.			
I don't think that there are any serious environmental problems today	1.97 (2.33)	.95*** (1.95)	5.18 (122)	<.001	.01	Item deleted	
To care for the environment is the responsibility of the government and the parliament.	5.12 (2.59)	4.24*** (2.65)	3.42 (2032)	.001	<.01	Item deleted	

Note: \*\*\*:  $p \leq 0.001$ ; \*:  $p \leq 0.10$

## **4. CONCLUSIONS**

### **Advertising media attitudes and usage**

Previous research has shown that consumer trust in advertising is low and continues to diminish (Edelman, 2009). Researchers have also found that a big share of advertising investments is placed in less favorable media which can add to consumers' disbelief towards advertising (Callius, 2008). The results of the present study add to these previous findings by indicating that marketing managers' beliefs about consumers are not consistent with consumers' attitudes toward and usage of advertising in different media. The results of this study also indicate that consumers' attitudes toward advertising in general and toward advertising that is adjusted to previous purchases are not as positive as what marketing managers believe about consumers. Ignoring this phenomenon may have consequences for companies investing in less favorable media and thereby adding to consumers' increasing disbelief towards advertising.

This study found that the consumers' trust level in advertising in all the 11 media studied is significantly lower than what the marketing managers believe about consumers. In addition, the consumers' trust-levels in advertising were found to vary among the different media. When marketing managers are not aware of these discrepancies and not considering that "the medium is the message" (McLuhan, 1964, p. 203), consumer trust in the company's advertising message may be lower than expected. In addition, the results indicate that the consumers' use of advertising media is not consistent with the marketing managers' beliefs about consumers. Among the 11 advertising media studied here, there are some media found to stand out.

### **Paper-based media and TV**

One of the advertising media that was found to stand out is direct mail. The marketing managers seem to believe incorrectly that consumers consider direct mail to be worse, more



irritating and more harmful for the green environment than the consumers claim. In addition, among the 11 media studied direct mail was found to be the second most trusted medium by the consumers, after in-store (posters), which is not consistent with what the marketing managers believe about consumers. The consumers thus have a more positive attitude towards direct mail than what the marketing managers believe about consumers. This may imply that the marketing managers may miss out on selecting such a favorable advertising medium for marketing communication purposes that could impact the company's brand(s) positively.

The results further indicate that consumers make most use of ads in many of the paper-based media when they want to buy groceries (direct mail, newspapers and magazines, in-store posters) and home electronics (direct mail, catalogues and brochures, newspapers and magazines, in-store posters and Internet advertising), which is not consistent with the marketing managers' beliefs about consumers.

The greatest discrepancy was found to be related to ads on TV. The marketing managers seem to believe incorrectly that ads on TV are not only more trusted but also more used by consumers than the consumers claim. For both product categories (groceries and home electronics) the consumers seem to make significantly less use of ads on TV compared to marketing managers' beliefs about consumers. In addition, TV seem to be considered by the consumers as a medium that is not as good, more irritating, less trustful and more harmful for the green environment than the marketing managers believe about consumers.

Considering the high costs that are involved with TV advertising, these findings suggest that when marketing managers distribute the media budget towards mainly TV the risk exists that advertising effects will not be most favorable since consumers will avoid/not make use of the advertising messages. Marketing managers should therefore consider carefully other media options, such as many of the paper-based media that the consumers claim to use more than ads on TV, before deciding to invest in mainly expensive TV advertising.

## **Mobile phones**

The results show that consumers have a more negative attitude towards advertising through mobile phones compared to marketing managers' beliefs about consumers. The consumers further seem to consider the mobile phone to be more harmful for the green environment than the marketing managers believe about consumers. While the mobile phone is found to be the least used advertising medium by the consumers which is in accordance to the marketing managers' beliefs about consumers, the extent to which marketing managers believe that consumers use this advertising medium is greater compared to what the consumers claim they do. Advertising through the mobile phone is considered by the consumers as one of the worst, most irritating and least trusted among the 11 advertising media studied here. This study investigated only mobile phone services such as SMS and MMS, thus not all the possible ways in which ads can reach consumers today through mobile phones.

## **Green environmental responsibility attitude (GERA)**

With the exception of direct mail, the consumers perceive all other advertising media in this study to be more harmful for the green environment compared to what the marketing managers believe about consumers.

When comparing the consumers' and marketing managers' attitudes toward green environmental responsibility (GERA), the results indicate that compared to the consumers, the marketing managers are more concerned about the environmental situation today, they are more precise with paper being sorted and recycled and that they consider caring for the green environment to be more of an individual's/organization's responsibility rather than that of the government.

Further analysis on green environmental responsibility attitudes showed that marketing managers have a stronger personal green environmental responsibility attitude (Personal

GERA) than the consumers. This indicates that the marketing managers feel more personal responsible towards caring for the green environment than the consumers.

It was also found that the consumers and marketing managers alike consider organizations to have a high responsibility toward the green environment (Organizational GERA). It could thus be inferred that the marketing managers as well as the consumers seem to have equally high demands and expectations of organizations to act responsible toward the green environment. However, this contradicts previous findings that showed that the green environmental aspect is among the factors that are the least considered when marketing managers work with marketing communication in general and advertising media selection in particular (Rademaker, 2011a; 2011b). On the other hand, the results of this study indicate that green environmental responsibility attitude is weakly related to the perception on the green environmental aspect of advertising media. Thus, explanations for the discrepancies found in this study between the two groups regarding green environmental perceptions on the 11 different advertising media should be explained by factors other than green environmental responsibility attitude (GERA).

The discrepancies found in this study could perhaps be due to the consumers' and marketing managers' exposure and/or use of different sources of information regarding how harmful for the green environment each medium in fact is. For example, how harmful is it exactly to use paper-based media when paper is being recycled? Or, how harmful is it exactly when selecting city buses as advertising media when biogas is used? It could be speculated that the lack of proper information or knowledge on how harmful for the environment a specific advertising medium in fact is, could be a main reason for possible differences in green environmental perceptions among both the marketing managers and consumers.

## **5. FUTURE RESEARCH**

This study has identified discrepancies between consumers' perceptions on advertising media and marketing managers' beliefs about consumers. In particular, discrepancies were found in relation to eco-friendly media characteristics. In respect to future research there is a need to further explore environmental aspects of media. Future research should investigate whether a perceived (non-) eco-friendly medium as well as varying ecological information about a specific medium will impact advertising effectiveness.

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